

CLAIMS

1. A VPN converter having interfaces for interfacing two or more VPNs to an external network or networks, arranged to receive information relating to a communication session between an entity in any of the VPNs and the external network or networks
5 and to convert a format of the information.
2. The VPN converter of claim 1, arranged to cooperate with a call server in the external network to effect the communication session.
- 10 3. The VPN converter of claim 2, the communication session being one of: a data session, a telephony call, a video call, and a fax communication.
4. The VPN converter of claim 1, arranged to convert a transmission format of the information.
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5. The VPN converter of claim 4, the transmission format being one of IP, ATM, MPLS and TDM formats.
6. The VPN converter of claim 1, arranged to convert an encoding format of the
20 information.
7. The VPN converter of claim 6, the encoding format being one of G.711, G.729, and G.726 formats.
- 25 8. The VPN converter of claim 1, arranged to convert between different versions of the IP protocol.
9. The VPN converter of claim 2 arranged to interface communication sessions having one end in one of the VPNs and another end in the external network.
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10. The VPN converter of claim 9, arranged to return to the entity a destination address which lies in a selected address space of the respective VPN for bearer packets of the communication session being set up in response to a control indication for this communication session from the call server.

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11. The VPN converter of claim 10, the converter being arranged to associate signals related to the communication session being set up in the external network, and the destination address for the communication session being set up.
- 5 12. The VPN converter of claim 11, the signals relating to a TDM slot of a trunk, and an IP address allocated to the communication session in the form of a call.
13. The VPN converter of claim 1, arranged to determine which of the VPNs the information relates to, and associate VPN converter resources to a communication
10 session associated to the identified VPN.
14. The VPN converter of claim 13 where determination of the VPN identity is based on an external network address associated to the VPN entity.
- 15 15. The VPN converter of claim 13 where determination of the VPN identity is based on a VPN identifier parameter provided by an entity of the VPN.
16. The VPN converter of claim 13 where determination of the VPN identity is based on parameters associated with establishment of the communication session.
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17. The VPN converter of claim 16 where the parameters comprise an E.164 address.
18. The VPN converter of claim 13 having a number of interface ports each
25 corresponding to a different one of the VPNs, and the determination of the VPN identity is based on which of the interface ports is used for the communication session.
19. A server for controlling a communication session between an entity of any of
30 multiple VPNs and an external network or networks via the converter of claim 1, the server being arranged to determine which of the VPNs is related to the communication session, and to cooperate with the converter to use the identity of the VPN in controlling how the communication session is handled by the converter.
- 35 20. The server of claim 19 being a call server located in the external network, and the communication sessions comprising calls.

21. The server of claim 20 arranged to cooperate with the entity to determine the identity of the VPN.

5 22. The server of claim 21 arranged to determine the identity of the VPN based on an external network address associated to the VPN entity.

23. A method of using a converter to interface two or more VPNs to an external network or networks, having the steps of receiving at the converter information relating to a communication session between an entity in any of the VPNs and the
10 external network or networks and converting a format of the information.

24. The method of claim 23 having the steps of passing a request for a communication session from the entity to a call server external to the VPN, determining which of the VPNs the entity belongs to, and using the identity of the
15 VPN in the converter to route the information.

25. A method of offering a virtual private network service over the converter of claim 1.

20 26. A node for a network, the node having a converter as set out in claim 1.

27. Software for carrying out the method of claim 23.

28. A sequence of signals to and from a VPN converter having interfaces for
25 interfacing two or more VPNs to an external network or networks, the external network or networks having a different data format to those of the VPNs, the VPN converter being arranged to convert the data format of information relating to a communication session between an entity in any of the VPNs and the external network or networks, the sequence comprising a signal from the entity of one of the
30 VPNs, addressed to an entity in the external network which appears to have an address within an address range of the respective VPN, and a signal returned from the external network, converted by the VPN converter and routed by the VPN converter back towards the entity in the respective VPN.

35 29. The sequence of signals of claim 28, further comprising a signal from the VPN converter to a call server containing an identity of the respective VPN.